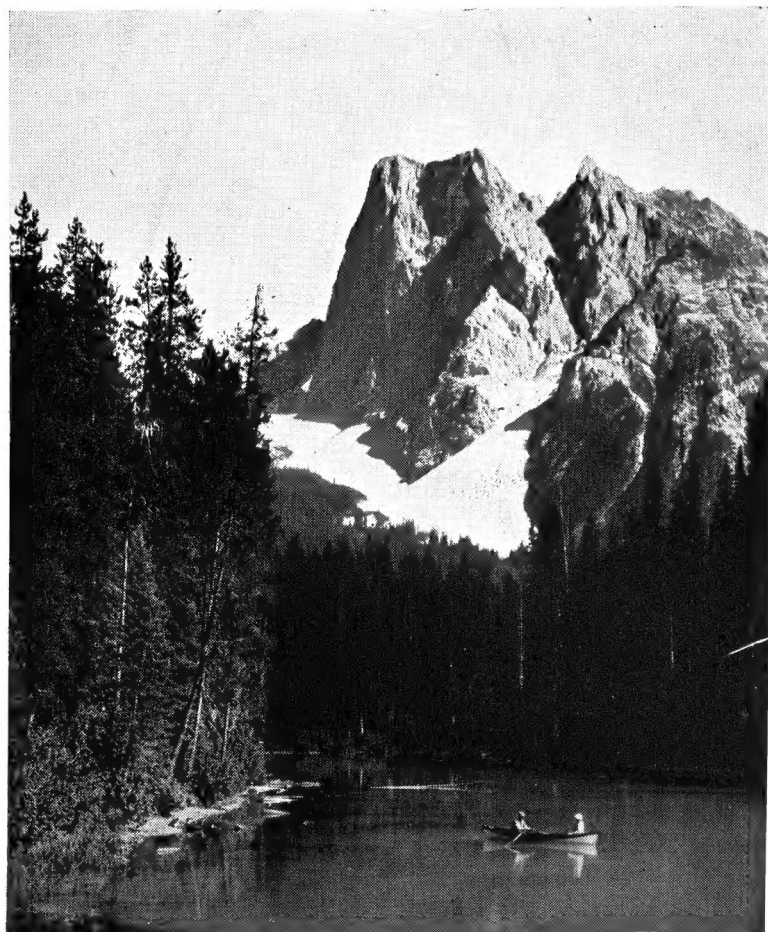


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ALBERTA'S FIRM FOUNDATIONS

Forest Nursery Station
BUTHERLAND, SASK.



A PLEA FOR THE CONSERVATION OF HER
WATER AND WOODLANDS

How Alberta Was Named

ALBERTA was named by the Marquis of Lorne, who was Governor-General of Canada at the time the province came into being. It was named Alberta, after H.R.H. Princess Louise Caroline Alberta, fourth daughter of Queen Victoria, wife of the Marquis; and she was, doubtless, named after her father the Prince Consort. The Marquis of Lorne in his "Memories of Canada and Scotland," says:

"In token of the love which thou hast shown
For this wide land of freedom, I have named
A province vast, and for its beauty famed,
By thy dear name to be hereafter known.
Alberta shall it be. Her fountains thrown
From Alps unto three oceans, to all men
Shall vaunt her loveliness e'en now; and when
Each little hamlet to a city grown,
And numberless as blades of prairie grass
Or the thick leaves in distant forest bower
Great people hear the giant currents pass.
Still shall the waters, bringing wealth and power,
Speak the loved name—the land of silver springs—
Worthy the daughter of our English kings."

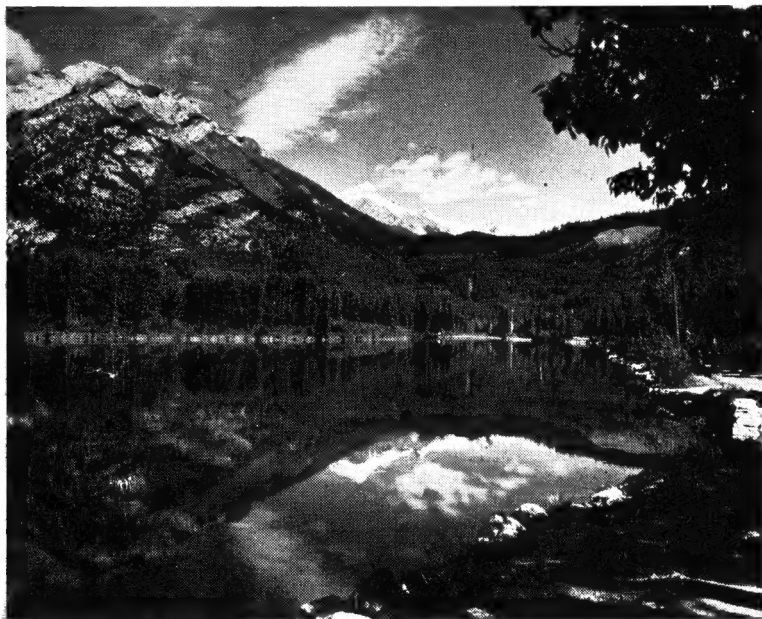


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THE CANADIAN FORESTRY ASSOCIATION

Alberta's Firm Foundations

Written by Leonard D. Nesbitt
for the Canadian Forestry Association.



The Eastern Slope of the Rockies—Source of Prairie Rivers

COMPARED with other provinces, states and nations, Alberta is quite youthful. It was formed as a province of the Dominion of Canada in 1905. Prior to the coming of the white man, its southern prairies were for centuries pasture grounds for countless herds of the migratory buffalo. Following the slaughter of these great bovines, ranchers came along with their flocks and herds and inaugurated the era of the rangeland. Then came a great influx of the farmer settlers, seeking free homesteads and cheap land. The height of this immigration was about 1910. Since then agriculture has developed into an industry with a capital value approximating three-quarters of a billion dollars.

Agriculture is outstandingly the principal industry of the province. Close to 100,000 farm families occupy some twenty million acres of cultivated land, about twelve million acres of which are annually seeded to field crops. The principal manufactures of the province are engaged in processing farm products—flour milling, meat packing, milk processing, sugar refining, and so on.

While the soil in Alberta is fertile and its climate moderate, its annual precipitation is low compared with that of coastal British Columbia and Eastern Canada. Long-time records show the average annual rainfall to be: Edmonton 12.74 inches, Calgary 11.65, Lethbridge 9.96, and Medicine Hat 9.25. This compares with 58 inches annually for Vancouver, 38 inches for London, Ontario, 37 inches for Sherbrooke, Quebec, and 38 inches for Kentville, Nova Scotia.

WATER FROM THE MOUNTAINS

Nature has come to the aid of the Alberta farmer, however, and has provided, in the mighty ranges of the Rocky Mountains which hem the province's western boundary, an enormous "cold storage system" which furnishes an abundance of water the year round. High amid the cloud-tipped ranges great masses of snow are cradled. Each winter sees the accumulation augmented, but all the year round a melting process is going on, furnishing the source of numerous creeks and rivers which rush down the mountain sides and furrow their way across the broad prairies.

Were it not for this natural process, farming would be impossible in Alberta. There would be no sparkling life-giving waters from the mountains. Wells would dry up and modern life would be handicapped. Alberta would become a desert.

The Alberta farmer, as he gazes wonderingly on a summer evening at the beauty of the pastel shades which delicately illumine the jagged skyline of the Rocky Mountains, might well stop to think that his living and all his hopes are contained in the innumerable glaciers and snow deposits of the high ranges. The city resident, as he turns on his water tap, might well ponder on what would happen to him if anything disturbed the natural flow of the mountain creeks and rivers.

THE EASTERN WATERSHED

A few miles north of beautiful Lake Louise, alongside the main line of the Canadian Pacific Railway, a simple structure marks the apex of the watershed. A little stream rushes down from the mountain side and divides at its base, one-half running eastward and the other half in a westerly direction.

"From the same cradle side
From the same mother's knee
One to long darkness and the frozen tide
One to the peaceful sea."

The stream that flows eastward eventually gets into Hudson's Bay, and the one that flows to the west finally reaches the Pacific ocean.

The eastern watershed is what most concerns, not only Alberta people, but those who live in Saskatchewan and Manitoba. That watershed is the source of two great river systems—the North Saskatchewan and the South Saskatchewan. These systems include many smaller rivers, but eventually they all form the Saskatchewan, which flows into Lake Winnipeg, and thence, via the Nelson river, into Hudson's Bay.



Scene in Rocky Mountain Forest

Snowfall amid the mountains is very much heavier than on the prairies. Winding through the mountain passes in wintertime a traveller in the passenger coach of the railway train sees the lower mountainsides and the valleys deeply embedded in long, level stretches of deep drifts of snow. When the sun swings northward in spring-time, this accumulation begins to melt and augment the flow of the rivers. If it were not for the protection of the tree growth, the melting season would be short, there would be a great rush of water, the rivers would be in flood condition for a limited period, and then there would be a drying up, with meagre streams trickling down river beds, wholly inadequate in volume to meet the requirements of those who live and work on the prairies.

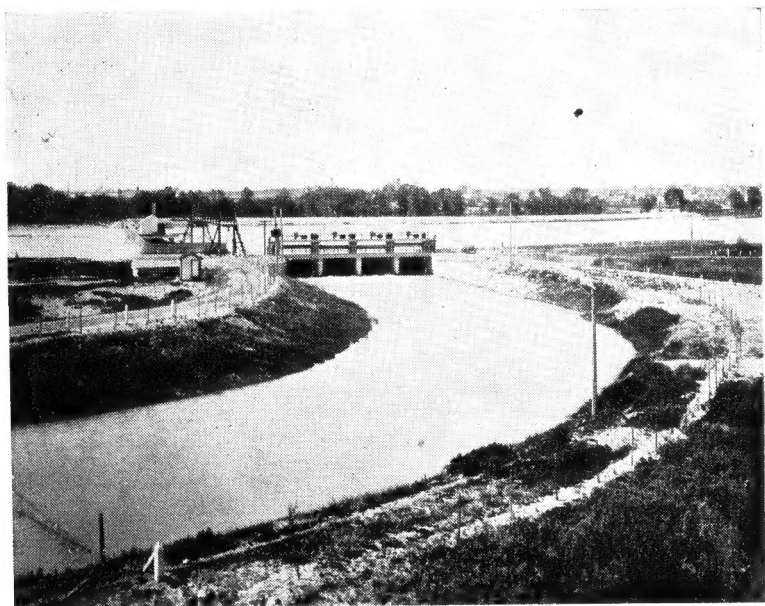
If you take a large square of linoleum, slope it into the form of a ramp, and then pour a pail of water on the top side, you will see a quick flood, with little moisture left thereon. But if you put a rug over the ramp and follow the same procedure with a pail of water, you will notice the moisture seeping into the texture of the rug and gradually flowing downward. That example will show you what forest growth does to melting snow and ice in the mountains.

It will thus be seen that the maintenance of the forest growth on the eastern slope of the Rockies is of vital importance to the people of Alberta, Saskatchewan and Manitoba.

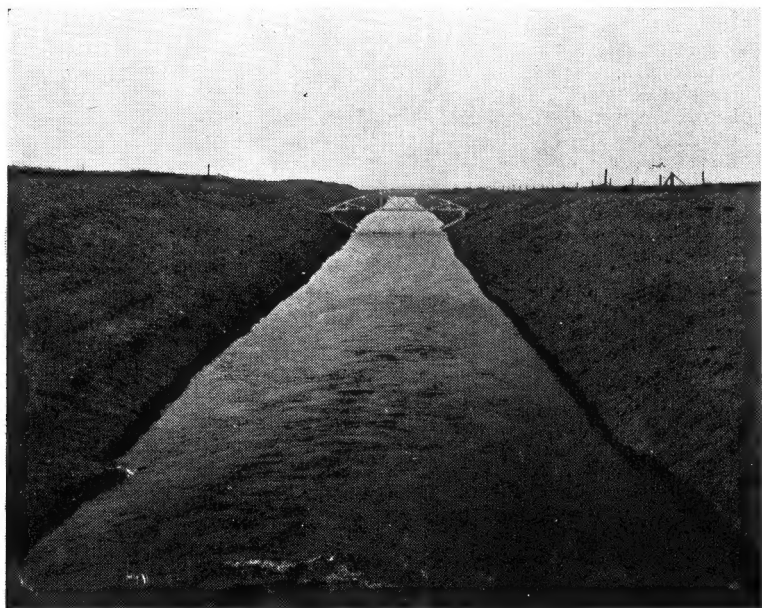
The majority of people regard forests as little else than a source of timber supply and the home of wild life. But forests have a duty of even greater importance--the preservation, regulation and purification of the world's water supply, and the regeneration of the atmosphere. Without forests it would be almost impossible to sustain life. The welfare of the people of the prairie provinces is indissolubly tied to the preservation of the forest growth on the eastern slopes of the Rocky Mountains. Every farmer in the prairie provinces should be a conservationist, particularly when it comes to the preservation of these forests.

OPPORTUNITY FOR IRRIGATION

There is very little cleared arable land in regions of adequate rainfall now available for settlement in Alberta. But there is a **great** area of open prairie in southeastern Alberta in which the rainfall is too low for economic farming. In that region, experience has shown that the chances of being drouthed out are about fifty-fifty. On the average every second year is a dry one. Nevertheless, this area has fertile soil, is not far from such marketing centers as



Diversion of River Water into Main Irrigation Canal



Main Canal Carrying Life-giving Water

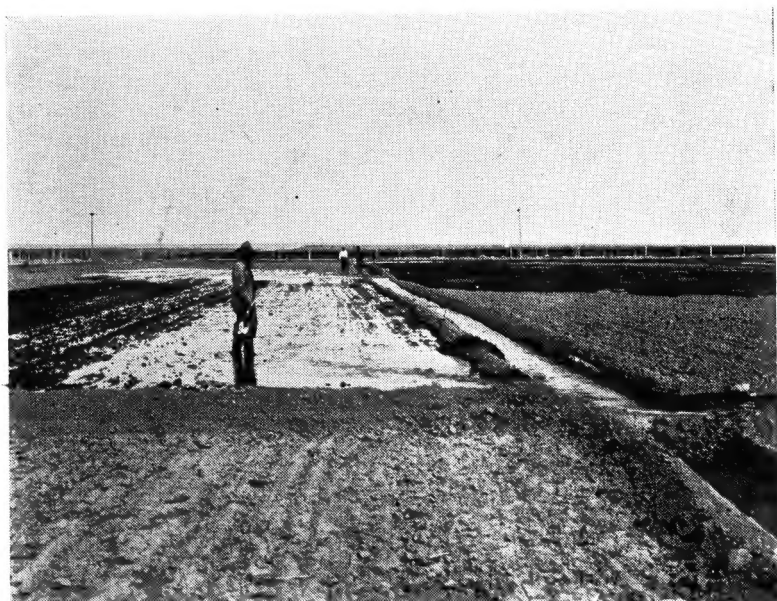
Calgary, Lethbridge and Medicine Hat, is adequately furnished with railroads and highways, and can be economically supplied with such modern conveniences as telephones and electricity. There are a million acres of land therein which can be economically irrigated.

Irrigation farming has been practised for many centuries. Farmers on the Mesopotamian plains, through which the Tigris and Euphrates rivers flow, one of the earliest abodes of the human race, used irrigation long before the birth of Christ. For thousands of years the waters of the Nile have been used by the Egyptians for irrigation purposes. Irrigation farming was also practised in North Africa in ancient times; and on the west coast of South America, centering on Peru, the Incas had well-established irrigation systems before the Spaniards arrived.

In North America, irrigation farming was first practised in California and Utah, where arid conditions prevail, and gradually extended throughout the great plains of the midwestern United States. Substantial projects were built in the states of Washington, Oregon, Idaho, Colorado and elsewhere.

Long before Alberta was formed as a province, irrigation was practised by ranchers who diverted water from creeks in order to increase hay production. The late Col. J. S. Dennis, former superintendent of the department of natural resources of the Canadian Pacific Railway, was an outstanding pioneer in irrigation development in Southern Alberta. Travelling westward from Medicine Hat before the railway had reached Calgary, he was compelled to follow the river to obtain necessary water supplies. Later he was the main force in encouraging the C.P.R. to construct the great irrigation schemes now existing between Calgary and Medicine Hat. The company also constructed irrigation systems in the vicinity of Lethbridge.

This province is fortunate in that it lies at the foot of the Rocky Mountains and gets the first opportunity to use the waters of the rivers descending therefrom. These waters may be impounded in large and small reservoirs, or diverted direct into irrigation channels. In a dry summer when the irrigation season is at its peak, tremendous quantities of water are used. During one very dry season the Eastern Irrigation District, with headquarters at Brooks, diverted almost the whole flow of the Bow River to meet the requirements of the water users.



Farmers Spreading Water from Lateral Ditches



Irrigation Water may mean the difference between 5 bushels of wheat to the acre or 50.

A regular supply of water is a matter of life or death to the irrigation farmer. Consequently, he is vitally interested in seeing that every possible effort is made to maintain the rivers at a constant flow. His main concern, therefore, must be in the perpetuation of the mountain forests. They are the principal factor in slowing down and spreading out the annual run-off from the melting snows and glaciers.

Southern Alberta's irrigation districts have produced enormous quantities of agricultural wealth and have had a steadying effect on the economy of the province in years of crop failure. In seasons when torrid drouths stunt the grain on millions of acres of land in southern Alberta, searing the gardens and the pastures and creating scarcities for both man and beast, the irrigation districts assume the role of oases. From these areas come fruit and vegetables, grain, alfalfa and other kinds of hay, and a wide variety of other farm products readily available to the unfortunate farmers on drouthed out land. The irrigated areas around Lethbridge turn out a hundred million pounds of sugar a year. The honey industry in Alberta, growing in importance each year, centers on the irrigation areas. They are regions wherein farm homes are surrounded by green lawns, beautiful flowers and shrubs and stately trees, affording a decided contrast to the short grass, untreed prairie.

FIRE: THE GREAT ENEMY

In every progressive nation, the world over, watershed forests are rigorously guarded against every form of injury. Rivers and streams are not **self-controlled**. They prosper, or dwindle, or may be virtually wiped out by the condition of their drainage areas. This has happened in countless instances, and those people dependent upon a stable water supply have paid a tragic price. Mountain streams are, in truth, a **perishable** asset and can be retained only as the watershed forests are retained. No costly artificial structure ever can replace the regulative value of woodlands in maintaining a water supply. The engineering wisdom of a score of countries makes this truth crystal clear.

The outstanding enemy of Alberta's mountain forests is Fire. Except for lightning, all conflagrations are of human origin—the tossed-away match or lighted tobacco, or the unextinguished camp fire.



Destruction, Desolation, Impoverishment



Prosperity, Beauty and Happiness

These hazards do not baffle any modern highly-skilled forest protection system. They are brought within control by persistent popular education. Each forest area, under any well-organized plan, is divided into districts, manned by a personnel of first-rate calibre, equipped with lookout towers, telephones and radio, strengthened by a system of roads and trails, with trucks, fire-pumps and tools.

Such safeguards represent a trifling 'insurance premium' on the continuance of Alberta's water supply, and the security of the rivers that water the plains of Western Canada.

The people of Alberta must be made aware of the imperative need to protect the mountain forests against fire. Their wishes, in turn, must be impressed upon the responsible government authorities. Tragedy has stalked the woodland resources of the east slope. Its devastating course must be arrested, and the future record written in terms of full and rapid regeneration and a visible upbuilding of the sources of our provincial security.

Alberta is not a way-station. It is the permanent abode of a shrewd and enterprising people.

'Her fountains thrown from Alps unto three oceans
—a land of silver springs.'

The generations of Albertans to follow in our footsteps will weigh the sagacity and public spirit of 1946 by our record as Foundation Builders.

This, then, is a plea that we here and now 'make safe the way' for Alberta's waters and woodlands. To lose a single season in applying the remedy is to compound the penalties upon the future.

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CANADA'S MOST IMPORTANT FORESTS

By ROBSON BLACK

President Canadian Forestry Association.

The East Slope watershed forest of the Rockies is the most important single strip of forest treasure in the whole Dominion. And the reason is that it governs the flow of virtually every river that waters the western plains. It is a citadel guarding the ramparts of the west's richest possessions—her irrigation, her hydro-electric powers, the water levels of the rancher's wells, and the stability of Saskatchewan and northern Manitoba. But those watershed forests are in a state of subtraction. The Dominion government's records for the ten years, 1930 to 1940, show an average debit of 30,000 acres of annual fire damage, and it ought to be 30,000 acres added rather than lost. No one should load the blame for this on Alberta alone. It has been a Dominion-Provincial responsibility, a dreadfully expensive piece of procrastination, with the Dominion doubtless able to carry the larger portion of the cost.